

**FIRST-ORDER TYPE DRIVE THROUGH SYSTEM, MERCHANDISE ORDER  
RECEIVING METHOD, AND PROGRAM OF THE SAME**

**BACKGROUND OF THE INVENTION**

5    Field of the Invention:

        The present invention relates to a first-order  
type drive through system, a merchandise order receiving  
method, and a program, particularly to a first-order type  
drive through system in which an internet is used to grasp  
10    orderer's present position between a merchandise ordering  
time and a merchandise transfer time on an order receiving  
side, a merchandise order receiving method, and a program.

Description of the Related Art:

        A drive through system capable of shopping in an  
15    automobile has been a merchandise purchase system which  
saves troubles or time in driver's parking, getting on/off  
a bicycle, or transporting merchandises. This has been  
applied to intelligent transport systems (ITS) to realize  
the drive through system in which an ITS terminal device in  
20    a car is used to brose detailed merchandise information or  
to make a payment in a cashless manner.

        However, a conventional drive through system has  
heretofore had the following problems.

        A first problem is that an order is placed after  
25    reaching a store, and a time is therefore required until  
the merchandise can be prepared. This is a waste of time  
for a user who wants to receive the merchandise soon, and

therefore a degree of satisfaction has dropped.

A second problem is that a waiting line is generated by the time required until the merchandise can be prepared, and therefore a turnover of the store sometimes drops.

As a related art for solving the above-described problems, a component ordering system has been disclosed in Japanese Patent Application Laid-Open No. 2002-342513 (hereinafter referred to as Patent Document 1). In the invention described in Patent Document 1, even when the user is traveling, the user can receive components in the store. In the invention described in Patent Document 1, the user sends information indicating user's present place and destination to a server side. On the server side, a store capable of receiving/transferring the components is searched for along a route to the destination from the present place based on the received information indicating the present place and destination, and search results are presented to a user side.

However, in the related arts including the invention described in Patent Document 1, since the position on the user side is not constantly grasped on the server side, it has been difficult to quickly cope with a case where the user passes by the store without correctly grasping the place of the store where the user is to receive the components.

#### SUMMARY OF THE INVENTION

The present invention has been developed in consideration of the problems, and an object thereof is to provide a first-order type drive through system in which an order receiver can trace an orderer's position during  
5 movement of the orderer of a merchandise and which stops the acquisition of position information of the orderer on an order receiver side at the time of merchandise transfer completion to protect orderer's privacy, a merchandise order receiving method, and a program.

10 To achieve the object, according to the present invention, there is provided a first-order type drive through system comprising: an orderer system mounted on moving means on which an orderer gets; an acceptance center system which accepts an order from the orderer system; a  
15 preparation place system installed in a preparation place where a merchandise is prepared; and a transfer place system installed in a transfer place where the merchandise prepared in the preparation place is transferred to the orderer, the systems being connected to one another via a  
20 network. In the system, at least one of the preparation place system and the transfer place system periodically acquires position information indicating a present position of the orderer from the orderer system from when ordering information indicating that the orderer has placed an order  
25 for the merchandise is received from the orderer system until information indicating that transfer of the merchandise to the orderer has been completed is received

from the orderer system, and grasps the orderer's present position.

Moreover, according to the present invention, there is provided a first-order type drive through system comprising: an orderer system mounted on moving means on which an orderer gets; an acceptance center system which accepts an ordering from the orderer system; a preparation place system installed in a preparation place where a merchandise is prepared and stored; and a transfer place system installed in a transfer place where the merchandise prepared in the preparation place is transferred to the orderer, the systems being connected to one another via a network. In the drive through system, the orderer system includes: position information acquisition means for acquiring position information indicating a present position of the orderer; position information transmission means for transmitting the position information acquired by the position information acquisition means; and ordering means for transmitting ordering information indicating that the merchandise is ordered to the acceptance center system. The acceptance center system includes: preparation place/transfer place determination means for determining the preparation place where the ordered merchandise is prepared in accordance with the ordering information and the transfer place where the merchandise is transferred upon receiving the ordering information from the orderer system; ordering information transfer means for

transmitting the ordering information to the transfer place system and the preparation place system in the preparation place and the transfer place determined by the preparation place/transfer place determination means; and position acquisition stop command means for transmitting a command for stopping the acquisition of the position information to the transfer place system and the preparation place system upon receiving transfer information indicating that the orderer has received the merchandise ordered in accordance with the ordering information from the preparation place system.

Moreover, according to the present invention, the acceptance center system includes preparation place/transfer place position information storage means for storing one or more pieces of preparation place/transfer place position information indicating locations of the preparation place and the transfer place. The preparation place/transfer place determination means transmits a request for acquiring the position information to the orderer system to acquire the position information upon receiving the ordering information from the orderer system, refers to the preparation place/transfer place position information so that the designated merchandise can be prepared based on the acquired ordering information and position information, extracts the preparation place positioned in a predetermined distance from the orderer's present position, and extracts the transfer place

positioned in a predetermined distance from the extracted preparation place.

Moreover, according to the present invention, the preparation place system includes preparation place position acquisition means for periodically transmitting the request for acquiring the position information to the orderer system from when the ordering information is received from the acceptance center system until the acquisition stop command is received to acquire the position information.

Furthermore, according to the present invention, the transfer place system includes: transfer place position acquisition means for periodically transmitting the request for acquiring the position information to the orderer system from when the ordering information is received from the acceptance center system until the acquisition stop command is received to acquire the position information; and transfer information transmission means for inputting the transfer information and transmitting the inputted transfer information to the acceptance center system upon completion of transfer of the merchandise to the orderer.

Additionally, according to the present invention, the transfer place system includes trouble occurrence notification means for monitoring a movement path of the orderer based on the position information acquired by the transfer place position acquisition means and transmitting trouble occurrence information indicating that a trouble

has occurred in transferring the merchandise to the acceptance center system, when a distance between the orderer's present position and the transfer place where the merchandise transfer is scheduled increases with an elapse  
5 of time.

Moreover, according to the present invention, the preparation place/transfer place determination means newly acquires the position information from the orderer system, and extracts the preparation place and the transfer place  
10 again, when the acceptance center system receives the trouble occurrence information.

Furthermore, according to the present invention, the drive through system further includes a traffic information management server which is connected to the  
15 network to store traffic information of a road. The transfer place system includes: transfer place traffic information acquisition means for transferring a request for acquiring the traffic information to the traffic information management server to acquire the traffic  
20 information; and transfer place arrival time estimating means for estimating a time when the orderer reaches the transfer place based on the acquired position information and traffic information.

Additionally, according to the present invention,  
25 the preparation place system includes: preparation place traffic information acquisition means for transmitting a request for acquiring the traffic information to the

traffic information management server to acquire the traffic information; and preparation place arrival time estimating means for estimating a time when the orderer reaches the transfer place based on the acquired position information and traffic information.

Moreover, according to the present invention, the orderer system includes destination information transmission means for transmitting destination information indicating a destination of movement by the orderer to the acceptance center system. The acceptance center system includes movement path estimating means for estimating orderer's future movement path based on the received position information and destination information upon receiving the position information and destination information from the orderer system. The preparation place/transfer place determination means extracts the preparation place and the transfer place within a predetermined distance from the estimated movement path.

Furthermore, according to the present invention, the preparation place system includes preparation place operation situation notification means for transmitting information indicating an operation situation of the preparation place to the acceptance center system. The transfer place system includes transfer place operation situation notification means for transmitting information indicating the operation situation of the transfer place to the acceptance center system. The preparation



place/transfer place determination means extracts the preparation place and the transfer place low in operation ratio based on the operation situation upon receiving the information indicating the operation situations of the preparation place and the transfer place.

Additionally, according to the present invention, the orderer system includes permission period input means for inputting a position acquisition permission period indicating a period in which the position information is permitted to be transmitted by the position information transmission means. The position information transmission means transmits the position information in the limited position acquisition permission period inputted by the permission period input means.

Moreover, according to the present invention, there is provided a merchandise order receiving method using a first-order type drive through system comprising: an orderer system mounted on moving means on which an orderer gets; an acceptance center system which accepts an ordering from the orderer system; a preparation place system installed in a preparation place where a merchandise is prepared and stored; and a transfer place system installed in a transfer place where the merchandise prepared in the preparation place is transferred to the orderer, the systems being connected to one another via a network. The method comprises: an ordering step in which the orderer system transmits ordering information

indicating the ordering of the merchandise to the acceptance center system; a position information transmission step in which the orderer system transmits position information indicating an acquired present position of the orderer; a preparation place/transfer place determination step in which the acceptance center system determines the preparation place where the merchandise ordered in accordance with the ordering information is prepared and the transfer place where the merchandise is transferred based on the ordering information and the position information received from the orderer system; an ordering information transmission step in which the acceptance center system transmits the ordering information to the transfer place system and the preparation place system in the determined preparation place and transfer place; a preparation place position acquisition step in which the preparation place system periodically transmits a request for acquiring the position information to the orderer system to acquire the position information upon receiving the ordering information; and a transfer place position acquiring step in which the transfer place system periodically transmits a request for acquiring the position information to the orderer system to acquire the position information upon receiving the ordering information.

Furthermore, according to the present invention, the method further includes: a trouble occurrence notification step in which the transfer place system

monitors a movement path of the orderer based on the acquired position information and transmits trouble occurrence information indicating that a trouble has occurred in transferring the merchandise to the acceptance center system, when recognizing that a distance between the orderer's present position and the transfer place where the merchandise transfer is scheduled increases with an elapse of time; and a preparation place/transfer place determination step in which the acceptance center system newly acquires the position information from the orderer system to determine the preparation place and the transfer place upon receiving the trouble occurrence information.

Additionally, according to the present invention, the method further includes: a transfer information transmission step in which the transfer place system inputs transfer information indicating that the orderer has received the ordered merchandise by the ordering information to transmit the inputted transfer information to the acceptance center system upon completion of the transfer of the merchandise to the orderer; and a position acquisition stop command step in which the acceptance center system transmits a command for stopping the acquisition of the position information to the transfer place system and the preparation place system upon receiving the transfer information by the acceptance center system.

Moreover, according to the present invention,

there is provided a program for allowing a computer to execute: an ordering information input process of inputting ordering information indicating a merchandise ordering from an orderer; a position information input process of  
5 inputting position information indicating a present position of the orderer; a preparation place/transfer place determination process of determining a preparation place where a merchandise ordered in accordance with the ordering information is prepared and a transfer place where the  
10 merchandise is transferred based on the inputted ordering information and position information; and an ordering information output process of outputting the ordering information to information processing devices installed in the determined preparation place and transfer place and  
15 permitting the acquisition of the position information.

Furthermore, according to the present invention, the computer is allowed to execute: a trouble occurrence notification input process of inputting trouble occurrence information indicating that a distance between the  
20 orderer's present position and the transfer place where the merchandise transfer is scheduled increases with an elapse of time and a trouble has occurred in merchandise transfer; and a preparation place/transfer place re-determination process of newly inputting the position information to  
25 determine the preparation place and the transfer place again, when the trouble occurrence information is inputted.

Additionally, according to the present invention,

the computer is allowed to execute: a transfer information input process of inputting transfer information indicating the completion of the merchandise transfer to the orderer; and a position acquisition stop command process of outputting a command for stopping the acquisition of the position information to information processing devices installed in the preparation place and the transfer place, when the transfer information is inputted.

#### BRIEF DESCRIPTION OF THE DRAWINGS

10           FIG. 1 is a diagram showing a first-order type drive through system in a first embodiment of the present invention;

15           FIG. 2 is a diagram showing a constitution of the first-order type drive through system in the first embodiment of the present invention;

            FIG. 3 is a diagram showing an operation of the first-order type drive through system in the first embodiment of the present invention;

20           FIG. 4 is a flowchart showing a flow of the operation by the first-order type drive through system in the first embodiment of the present invention;

            FIG. 5 is a flowchart showing the flow of the operation by the first-order type drive through system in the first embodiment of the present invention; and

25           FIG. 6 is a diagram showing a concrete example in which the first-order type drive through system in the first embodiment of the present invention is applied to a

fast-food reservation system.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

First Embodiment:

FIG. 1 is a diagram showing a first-order type  
5 drive through system in a first embodiment of the present  
invention. Functions possessed by the first-order type  
drive through system in the present embodiment will  
hereinafter be described with reference to FIG. 1.

The first-order type drive through system includes  
10 an orderer system 100, an acceptance center system 200, a  
transfer place system 300, and a preparation place system  
400. The orderer system 100 is connected to the acceptance  
center system 200, transfer place system 300, and  
preparation place system 400 via a network.

15 In the present invention, the orderer system 100  
has a position notification function of supplying orderer's  
position information to the acceptance center system 200.  
Therefore, an anticipated orderer's arrival time can be  
presumed in the acceptance center system 200. Since the  
20 orderer system 100 also supplies the position information  
to the transfer place system 300 and preparation place  
system 400, a transferer and a preparer of the merchandise  
can work while confirming a time till merchandise transfer.

The orderer system 100 is constituted of an  
25 information processing device operated by the merchandise  
orderer. For example, the orderer system 100 may also be  
realized by a personal computer (PC) of a desktop type,

tower type, or notebook type, or may also be realized by portable terminal devices such as a cellular phone, personal handy-phone system (PHS), and personal digital assistant (PDA). The orderer system 100 may also be  
5 disposed in movement means such as an automobile on which the orderer gets, but is not limited to this example.

The orderer system 100 has an ordering function, position detection function, position notification function, and bidirectional communication function.

10 The ordering function is a function of placing an order for the merchandise with respect to the acceptance center system 200. The position detection function is a function of detecting orderer's present position. The position notification function is a function of notifying  
15 the acceptance center system 200 and transfer place system 300 of position information acquired by the position detection function.

The bidirectional communication function is a function for use in carrying out bidirectional  
20 communication between the orderer system 100 and acceptance center system 200 via sound, video, telegraphic message, and the like to determine a transfer place where the orderer receives the merchandise. The bidirectional communication function is used for notifying the orderer of  
25 occurrence of a trouble, when there is the trouble during the receiving/transferring of the merchandise.

The acceptance center system 200 is constituted of

the information processing device installed in an acceptance center which is an organization for receiving the order for the merchandise from the orderer, and is operated and managed by a person (staff member) belonging to the acceptance center.

The acceptance center system 200 has an order receiving function, position acquisition function, preparation place/transfer place determination function, and negotiation function.

The order receiving function is a function of receiving information on the merchandise ordering by the orderer from the orderer system 100 to accept the received order for the merchandise. The order receiving function is a function of receiving information indicating that the merchandise has normally been transferred to the orderer from the transfer place system 300. When normal ending is notified from the transfer place system 300, the transfer place system 300 and preparation place system 400 are notified so as to stop the monitoring of the orderer's present position.

The position acquisition function is a function of receiving and acquiring position information indicating the orderer's present position transmitted from the orderer system 100.

The preparation place/transfer place determination function is a function of detecting a candidate of each of the preparation place and the transfer place of the



merchandise from the orderer's present position acquired by the position acquisition function.

5       The negotiation function is a function of transmitting information indicating the candidate of the transfer place determined by the preparation place/transfer place determination function to the orderer system 100 to present the information to the orderer. The acceptance center system 200 uses the negotiation function to receive the information indicating the transfer place determined by  
10       the orderer among the transfer place candidates from the orderer system 100. Furthermore, the acceptance center system 200 uses the negotiation function to notify the preparation place system 400 and transfer place system 300 of the transfer place information indicating the determined  
15       transfer place. The acceptance center system 200 uses the negotiation function to transmit transfer place information to the transfer place system 300, when the orderer's position information is transferred to the transfer place system 300.

20       The preparation place system 400 is a system constituted of the information processing device installed in the preparation place where the merchandise ordered to the acceptance center by the orderer is prepared, and is operated/managed by the preparer who carries out a  
25       preparation business of the merchandise in the preparation place. It is to be noted that the preparation place may be a place where one or more completed merchandises are

kept/stored, such as a stationer and a book store. In this case, upon receiving an order for shipping the merchandise kept/stored in the preparation place from the acceptance center system 200, the preparer selects the corresponding merchandise from one or more kept/stored merchandises to transport the merchandise to the orderer or the transferer.

The preparation place system 400 has a prepared merchandise content acquisition function. The prepared merchandise content acquisition function is a function of receiving and acquiring the ordering information indicating a merchandise content ordered by the orderer from the acceptance center system 200. The preparer prepares the merchandise in accordance with the prepared content indicated by the ordering information, and transports the merchandise to the transfer place upon completion of the preparation.

The transfer place system 300 is constituted of the information processing device installed in the transfer place where the merchandise prepared in the preparation place is transferred to the orderer, and is operated/managed by the transferer who carries out a transfer business of the merchandise in the transfer place.

The transfer place system 300 has a position acquisition function, arrival time estimating function, and transfer notification function.

The position acquisition function is a function of monitoring the position information directly acquired from

the orderer system 100, or the position information transferred from the acceptance center system 200. By the position acquisition function, a detected trouble is notified to the acceptance center system 200, for example, 5 when the orderer leaves the transfer place where the transfer has been scheduled without receiving any merchandise.

The arrival time estimating function is a function of estimating a period (time) when the orderer arrives at 10 the transfer place based on the position information continuously acquired by the position acquisition function every predetermined time.

The transferer receives the merchandise transported from the preparer to store the merchandise in 15 the transfer place. When the orderer arrives at the transfer place, the stored merchandise is transferred. By the transfer notification function, when the transfer of the merchandise to the orderer normally ends, the acceptance center system 200 is notified of the normal end 20 of the transfer.

FIG. 2 is a diagram showing a constitution of the first-order type drive through system in the first embodiment of the present invention. The constitution of the first-order type drive through system in the present 25 embodiment will hereinafter be described with reference to FIG. 2.

The first-order type drive through system includes

the orderer system 100, the acceptance center system 200, the transfer place system 300, the preparation place system 400, a position management server 500, an internet 601, a mobile unit network 602, a radio communication network 603, and a traffic information management server 700. It is to be noted that the number of systems constituting the first-order type drive through system is not limited to that in the present embodiment.

The orderer system 100 includes an intelligent transport system (ITS) terminal device 110, and global positioning system (GPS) terminal device 120.

The ITS terminal device 110 is a terminal device operated by the orderer, and is used by the orderer in using ITS to order the merchandise.

The ITS terminal device 110 includes a control section 111, transmission/reception section 112, information storage section 113, operation section 114, display section 115, and sound input/output section 116.

The control section 111 is connected to the transmission/reception section 112, information storage section 113, operation section 114, display section 115, and sound input/output section 116 to control the sections of the ITS terminal device 110 including the connected sections. The control section 111 may include, for example, a central processing unit (CPU), read only memory (ROM), and random access memory (RAM).

The transmission/reception section 112 is

connected to a transmission/reception section 122 of the GPS terminal device 120 to transmit/receive information with respect to the GPS terminal device 120. An antenna is disposed in the transmission/reception section 112 to carry out radio communication with respect to the mobile unit network 602. It is to be noted that the transmission/reception section 112 may carry out processes such as modulation/demodulation of signals and data conversion.

10           The information storage section 113 is a section in which information is stored, and various data and program are stored.

15           The operation section 114 is a section in which the information is inputted, and key switches such as a keyboard, touch panel, and mouse are disposed.

20           The display section 115 is a section on which the information is displayed, and may be, for example, a cathode-ray tube (CRT) display, a liquid crystal display (LCD), an organic electroluminescence (EL) display, or the like.

          The sound input/output section 116 is a section in which sound information is inputted/outputted and subjected to a data conversion process, and, for example, a microphone, speaker, and the like may also be disposed.

25           The GPS terminal device 120 is a terminal device operated by the orderer, and receives a radio wave from a GPS satellite to measure the orderer's present position

system 100.

The GPS terminal device 120 includes a control section 121, the transmission/reception section 122, an information storage section 123, and a position detection  
5 section 124.

The control section 121 is connected to the transmission/reception section 122, information storage section 123, and position detection section 124 to control the respective sections of the GPS terminal device 120  
10 including the connected sections. The control section 121 may also include, for example, CPU, ROM, and RAM.

The transmission/reception section 122 is connected to the transmission/reception section 112 of the ITS terminal device 110 to transmit/receive the information  
15 with respect to the ITS terminal device 110. The antenna is disposed in the transmission/reception section 122 to receive the radio signals from the GPS satellite. It is to be noted that the transmission/reception section 122 may perform the respective processes such as the  
20 modulation/demodulation of the signals and the data conversion.

The information storage section 123 is a section in which the information is stored, and various data and program are stored.

25 The position detection section 124 analyzes the radio signals from the GPS satellite received/converted by the transmission/reception section 122, detects various

information such as the number of the GPS satellite, doppler information, directions, and altitude, and measures the orderer's present position system 100 (GPS terminal device 120).

5           The acceptance center system 200 includes a control section 201, transmission/reception section 202, information storage section 203, operation section 204, display section 205, sound input/output section 206, and store position database (store position DB) 207.

10           The control section 201 is connected to the transmission/reception section 202, information storage section 203, operation section 204, display section 205, sound input/output section 206, and store position DB 207 to control the respective sections of the acceptance center  
15           system 200 including the connected sections. The control section 201 may include, for example, the CPU, ROM, and RAM.

          The transmission/reception section 202 is connected to the internet 601 to transmit/receive the information with respect to the orderer system 100,  
20           transfer place system 300, preparation place system 400, and position management server 500 via the internet 601. It is to be noted that the transmission/reception section 202 may also perform the respective processes such as the modulation/demodulation of the transmitted/received signals  
25           and the data conversion.

          The information storage section 203 is a section in which the information is stored, and various data and

program are stored.

The operation section 204 is a section in which the information is inputted, and the key switches such as the keyboard, touch panel, and mouse are disposed.

5           The display section 205 is a section on which the information is displayed, and may be, for example, the CRT display, LCD, organic EL display, or the like.

10           The sound input/output section 206 is a section in which the sound information is inputted/outputted and subjected to the data conversion process, and, for example, the microphone, speaker, and the like may also be disposed.

15           The store position DB 207 is a database in which information on one or more stores (transfer place and preparation place) is managed. In the store position DB 207, the position information in which the respective transfer places and preparation places are arranged is stored. In the store position DB 207, in addition to the store position information, various information such as road information (map information) and type/number of  
20           merchandises which can be prepared in the preparation place are managed. Further in the store position DB 207, the preparation places/transfer places positioned within a predetermined distance may mutually be associated.

25           The transfer place system 300 includes a control section 301, transmission/reception section 302, information storage section 303, operation section 304, and display section 305.



The control section 301 is connected to the transmission/reception section 302, information storage section 303, operation section 304, and display section 305 to control the respective sections of the transfer place system 300 including the connected sections. The control section 201 may include, for example, the CPU, ROM, RAM, and the like.

The transmission/reception section 302 is connected to the internet 601 to transmit/receive the information with respect to the orderer system 100, acceptance center system 200, preparation place system 400, and position management server 500 via the internet 601. It is to be noted that the transmission/reception section 302 may carry out the processes such as the modulation/demodulation of the transmitted/received signals and the data conversion.

The information storage section 303 is a section in which the information is stored, and various data and program are stored.

The operation section 304 is a section in which the information is inputted, and the key switches such as the keyboard, touch panel, and mouse are disposed.

The display section 305 is a section on which the information is displayed, and may be, for example, the CRT display, LCD, organic EL display, or the like.

The preparation place system 400 includes a control section 401, transmission/reception section 402,

information storage section 403, operation section 404, and display section 405.

5           The control section 401 is connected to the transmission/reception section 402, information storage section 403, operation section 404, and display section 405 to control the respective sections of the preparation place system 400 including the connected sections. The control section 401 may include, for example, the CPU, ROM, RAM, and the like.

10           The transmission/reception section 402 is connected to the internet 601 to transmit/receive the information with respect to the orderer system 100, acceptance center system 200, transfer place system 300, and position management server 500 via the internet 601.  
15           It is to be noted that the transmission/reception section 402 may carry out the processes such as the modulation/demodulation of the transmitted/received signals and the data conversion.

20           The information storage section 403 is a section in which the information is stored, and various data and program are stored.

          The operation section 404 is a section in which the information is inputted, and the key switches such as the keyboard, touch panel, and mouse are disposed.

25           The display section 405 is a section on which the information is displayed, and may be, for example, the CRT display, LCD, organic EL display, or the like.

The position management server 500 receives the orderer's position information from the orderer system 100 to store the position information associated with each orderer's identification information and received. Upon  
5 receiving the request for acquiring the position information from the acceptance center system 200, transfer place system 300, or preparation place system 400, the position management server 500 returns the corresponding position information.

10 The traffic information management server 700 is an information processing device in which traffic information such as jams, accidents, and highway regulations in roads is stored. The traffic information is updated every time new information is inputted. Upon  
15 receiving a traffic information acquisition request from the transfer place system 300 or the preparation place system 400, the traffic information management server 700 returns the traffic information of a corresponding region.

The internet 601 is a general internet, and is  
20 connected to the acceptance center system 200, transfer place system 300, preparation place system 400, mobile unit network 602, and traffic information management server 700.

The mobile unit network 602 is a network for performing mobile unit communication, and a base station  
25 apparatus, exchange station apparatus, gateway apparatus, and control device of the respective apparatuses in the mobile unit network may also be disposed. The mobile unit

network 602 is connected to the position management server 500, internet 601, and radio communication network 603.

The radio communication network 603 is a network established during the performing of the radio communication between the orderer system 100 and the mobile unit network 602.

FIG. 3 is a diagram showing an operation of the first-order type drive through system in the first embodiment of the present invention. The abscissa in FIG. 3 shows a time; and the ordinate shows a position (in actual, a distance from a certain observation point). It is to be noted that the time of the abscissa is assumed to proceed in order of  $t1 \rightarrow t2 \rightarrow t3 \rightarrow t4$ , and the movement means on which the orderer (orderer system 100) is mounted is assumed to move in order of abscissa position  $d1 \rightarrow d2 \rightarrow d3 \rightarrow d4$ .

Moreover, FIGS. 4 and 5 are flowcharts showing a flow of the operation by the first-order type drive through system in the first embodiment of the present invention. The operation by the first-order type drive through system in the present embodiment will hereinafter be described along FIGS. 4 and 5 with reference to FIGS. 2 and 3.

First, the position detection section 124 of the GPS terminal device 120 analyzes the radio signal received by the transmission/reception section 122 from the GPS satellite every predetermined time to periodically measure the present position of movement means on which the orderer

gets (step S101). The information storage section 123 stores the present position (position information) measured by the position detection section 124. It is to be noted that the position information is assumed to include  
5 information indicating a measurement time in addition to the orderer's present position.

At time t1, the control section 111 of the ITS terminal device 110 starts a browser stored in the information storage section 113, and the  
10 transmission/reception section 112 accesses a web page for ordering of the acceptance center stored in the information storage section 203 of the acceptance center system 200. When the transmission/reception section 112 receives the web page for ordering of the acceptance center from the  
15 acceptance center system 200, the display section 115 displays the received web page (step S102). It is to be noted that in the present embodiment the web page for ordering is assumed to be stored in the acceptance center system 200, but may be assumed to be stored in another web  
20 page (not shown) connected to the internet 601.

The operation section 114 inputs the ordering information indicating the ordering content of the merchandise in accordance with an input form of the web page for ordering displayed on the display section 115 by  
25 the orderer's operation (step S103). Examples of the inputted ordering information include "orderer's name", "merchandise to be ordered", "the number of merchandises to

be ordered", and the like.

Next, the transmission/reception section 112 transmits the inputted ordering information together with the orderer's identification information to the acceptance center system 200 via the radio communication network 603, mobile unit network 602, and internet 601 (step S104, (a) of FIG. 3).

Moreover, during ordering information transmission, the transmission/reception section 112 acquires the position information stored in the information storage section 123 of the GPS terminal device 120, and transmits the acquired position information together with the orderer's identification information to the position management server 500 (step S105, (a) of FIG. 3). The position management server 500 stores the position information transmitted from the orderer system 100 in a database managed by the server, and associates the information with the orderer's identification information to manage the information. Thereafter, the orderer system 100 periodically transmits the position information to the position management server 500.

Upon receiving the ordering information from the orderer system 100, the transmission/reception section 202 of the acceptance center system 200 transmits the request for acquiring the position information of the orderer who has placed the order to the position management server 500, and acquires the position information requested to be

acquired from the position management server 500 (step S106,  
(a) of FIG. 3). It is to be noted that the received  
ordering information and position information are  
associated with orderer's identification information and  
5 stored in the information storage section 203.

Next, the control section 201 refers to the  
received ordering information and the store position DB 207  
to search the preparation place where the ordered  
merchandise included in the ordering information can be  
10 prepared (step S107).

Next, the control section 201 searches the  
transfer place positioned in the predetermined distance  
from the preparation place where the ordered merchandise  
can be prepared, and extracts one or more transfer place  
15 candidates in which the orderer receives the merchandise  
from the transfer places whose information is stored in the  
store position DB 207 (step S108).

Next, the control section 201 prepares the web  
page in which the extracted transfer place candidate is  
20 indicated (step S109). For example, the above-described  
transfer place candidate web page may also indicate, for  
example, "transferer's name", "transferer's address", and  
"transferer's telephone number", and the like. At this  
time, the control section 201 may prepare the transfer  
25 place candidate web page indicating the transfer place  
candidate in order from the candidate whose distance from  
the orderer's present position based on the received

orderer's present position. The control section 201 calculates orderer's moving speed based on a plurality of pieces of orderer's position information (position and measurement time) managed by the position management server 500 (e.g., calculated as a speed per hour of 80 km in a case where the orderer moves by 80 km between 1:00 p.m. and 2:00 p.m.). Furthermore, the transmission/reception section 202 inquires the traffic information management server 700 of the present traffic information (such as the jams, accidents, and road regulations) to acquire the information. The control section 201 may use the moving speed, the orderer's present position, the traffic information, and the like to calculate a time (or an estimated arrival time) required until the orderer arrives at each transfer place candidate, and indicate the time on the transfer place candidate web page.

The transmission/reception section 202 of the acceptance center system 200 transmits the prepared transfer place candidate web page to the orderer system 100 (ITS terminal device 110) (step S110).

When the transmission/reception section 112 of the ITS terminal device 110 receives the transfer place candidate web page, the display section 115 displays the received transfer place candidate web page (step S111).

The orderer operates the operation section 114, inputs the predetermined information onto the transfer place candidate web page, and transmits the input



information to the acceptance center system 200 (step S112).

In step S112, the orderer may operate the operation section 114 to select the transfer place where the receiving of the merchandise is desired from the transfer place candidates displayed in the transfer place candidate web page. In this case, the transmission/reception section 112 transmits transfer place selection information indicating the transfer place candidate selected by the operation section 114 to the acceptance center system 200.

Moreover, in the step S112, when the orderer operates the operation section 114 to click a "direct delivery" button on the transfer place candidate web page, the transmission/reception section 112 may transmit information indicating a request for a "direct delivery" option of the merchandise to the acceptance center system 200. It is to be noted that the direct delivery option is a service of direct delivery of the merchandise prepared by the preparer to the orderer without the orderer's moving to the transfer place to receive the merchandise. In this case, instead of selecting the transfer place, the orderer designates the transfer place of the merchandise, and the transmission/reception section 112 transmits the information indicating the designated transfer place to the acceptance center system 200.

Moreover, in the step S112, the orderer may operate the operation section 114, for example, by clicking

a cancel button on the transfer place candidate web page to input cancel of the ordering for the merchandise, and the transmission/reception section 112 may transmit the information requesting for the cancel to the acceptance center system 200.

It is to be noted that in steps S109 to S112, the transfer place is selected on the web page, but the microphone and speaker of the sound input/output sections 116, 206 may be used to perform sound communication between the ITS terminal device 110 and the acceptance center system 200. Accordingly, the transfer place candidate may be notified via sound by the staff member of the acceptance center, the transfer place candidate may be selected via sound by the orderer, the direct delivery option may be selected, or the merchandise ordering may be canceled.

The control section 201 of the acceptance center system 200 judges whether or not the transmission/reception section 202 has received a request for canceling the merchandise ordering from the orderer system 100 (step S113).

When it is judged that the cancel request is received (step S113/Yes), the transmission/reception section 202 of the acceptance center system 200 notifies the transfer place system 300 and preparation place system 400 of the cancellation of the merchandise ordering, and thereafter the first-order type drive through system ends the operation.

When it is judged that the cancel request is not received (step S113/No), the control section 201 judges whether or not the transmission/reception section 202 has received transfer place selection information from the orderer system 100 (step S114).

When it is judged that the transfer place selection information is not received (step S114/No), the control section 201 judges whether or not the transmission/reception section 202 has received a direct delivery option request from the orderer system 100 (step S115). When it is judged that the direct delivery option request is not received (step S115/No), the control section 201 judges that normal input information is not transmitted to the acceptance center system 200 from the orderer system 100, and ends the operation.

When it is judged that the direct delivery option request has been received (step S115/Yes), the control section 201 refers to the store position DB 207 to search the preparation place close to the transfer place designated by the orderer (step S116). The transmission/reception section 202 transmits the ordering information to the preparation place system 400 of the preparation place extracted as a result of search (step S117). Here, the control section 201 sets the transfer place designated by the orderer to a destination at the time of the direct delivery option request, and stores the transfer place in the information storage section 203.

When the transfer place selection information is judged to have been received (step S114/Yes), the information storage section 203 associates the transfer place selection information with the orderer's identification information to store the information. The transmission/reception section 202 transmits the ordering information to the transfer place system 300 of the transfer place selected in accordance with the received transfer place selection information. Furthermore, the transmission/reception section 202 transmits the ordering information and the transfer place selection information even to the preparation place associated with the selected transfer place in the store position DB 207 (step S118, (b) of FIG. 3). In this manner, the acceptance center system 200 permits the transfer place system 300 and preparation place system 400 of a transmission destination of the ordering information to acquire the orderer's position information. Here, the control section 201 sets the selected transfer place to the orderer's destination, and stores the place in the information storage section 203. The transmission/reception section 202 transmits the information on the determined transfer place (name, address, telephone number, and the like of the transfer place) to the orderer system 100.

When the transmission/reception section 402 of the preparation place system 400 receives the ordering information from the acceptance center system 200, the

information storage section 403 stores the received ordering information. Thereafter, the display section 405 displays the content (orderer, ordered merchandise, the number of merchandises, and the like) of the received  
5 ordering information (step S119).

Moreover, upon receiving the ordering information, the transmission/reception section 402 transmits the request for acquiring the position information of the orderer who has received a merchandise preparation request  
10 to the position management server 500 every predetermined time, and receives the orderer's position information from the position management server 500 (step S120). The information storage section 403 associates the received position information with the orderer's identification  
15 information to store the information.

Moreover, every time new position information is acquired, the transmission/reception section 402 transmits a request for acquiring the traffic information (the jams, accidents, road regulations, and the like) of a region  
20 including a path between the orderer's present position and the location of the place where the merchandise is transferred to the traffic information management server 700. The traffic information management server 700 transmits the traffic information to the preparation place  
25 system 400 in response to the acquisition request. When the transmission/reception section 402 receives the traffic information, the information storage section 403 associates

the received traffic information to the orderer's identification information to store the information (step S121).

5       The control section 401 calculates orderer's moving speed based on the orderer's position information. The control section 401 estimates a time at which the orderer arrives at a place of the merchandise transfer based on the moving speed, position information, and traffic information (step S122).

10       The display section 405 displays the calculated estimated arrival time together with the ordering content by the ordering information. The preparer confirms the displayed estimated arrival time, while preparing the merchandise in accordance with the ordered content  
15       displayed in the display section 405 (step S123). It is to be noted that every time the position information and traffic information are newly acquired, the control section 401 calculates the estimated arrival time, and the display  
20       section 405 updates the display of the estimated arrival time. Therefore, the preparer can carry out a merchandise preparation operation along the displayed estimated arrival time to easily prepare a merchandise preparation schedule.

      Next, the control section 401 refers to the ordering information received by the transmission/reception  
25       section 402 to judge whether or not the direct delivery option is requested (step S124). When the direct delivery option is requested (step S124/Yes), the preparer moves to

the designated transfer place to directly deliver the merchandise to the orderer (step S125).

Here, the preparer directly transfers the merchandise to the orderer to settle the payment. The preparer uses the operation section 404 to input the information indicating the completion of the transfer of the merchandise and the payment. At this time, after the completion of the merchandise transfer and payment, the preparer may use a communication device carried by the preparer (cellular phone, PHS, PDA, notebook-size PC, and the like) to notify the preparation place system 400 of the completion of the merchandise transfer and payment. The transmission/reception section 402 of the preparation place system 400 transmits the information indicating the completion of the inputted merchandise transfer and payment (including the information of the name of the transferred merchandise and the number of merchandises) to the acceptance center system 200 (step S126).

Upon receiving the information indicating the normal ending of the merchandise transfer, the transmission/reception section 202 of the acceptance center system 200 transmits a command for stopping the acquisition of the position information of the orderer who has received the merchandise and the traffic information to the transfer place system 300 and preparation place system 400 (step S127). At this time, the acceptance center system 200 may transmit the information on the payment of the merchandise

to the preparation place system 400.

Upon receiving the information acquisition stop command from the acceptance center system 200, the transmission/reception section 302 of the transfer place  
5 system 300 and the transmission/reception section 402 of the preparation place system 400 stops an acquisition process of the corresponding position information and traffic information (step S128), and the first-order type drive through system ends the operation.

10 When the direct delivery option is not requested, and the transfer place is designated (step S124/No), the preparer transports the completed merchandise to the transfer place (step S129, (c) of FIG. 3).

Moreover, the transmission/reception section 302  
15 of the transfer place system 300 transmits the request for acquiring the position information of the orderer who has requested the merchandise transfer to the position management server 500 every predetermined time, and acquires the requested position information from the  
20 position management server 500 (step S130, (d) of FIG. 3). The information storage section 303 associates the received position information with the orderer's identification information to store the information.

Moreover, every time new position information is  
25 acquired, the transmission/reception section 302 transmits a request for acquiring the traffic information (the jams, accidents, road regulations, and the like) of the region



including the path between the orderer's present position and the location of the transfer place to the traffic information management server 700. The traffic information management server 700 transmits the traffic information to  
5 the transfer place system 300 in response to the acquisition request. When the transmission/reception section 302 receives the traffic information, the information storage section 303 associates the received traffic information with the orderer's identification  
10 information to store the information (step S131).

The control section 301 calculates the orderer's moving speed based on the orderer's position information. The control section 301 estimates a time at which the orderer arrives at the transfer place based on the moving  
15 speed, position information, and traffic information (step S132).

The display section 305 displays the calculated estimated arrival time together with the ordering content by the ordering information (step S133). It is to be noted  
20 that every time the position information and traffic information are newly acquired, the control section 301 calculates the estimated arrival time, and the display section 305 updates the display of the estimated arrival time. Moreover, when the merchandise does not arrive at  
25 the transfer place from the preparation place a predetermined time before the estimated arrival time, the display section 305 may transmit the information promoting

immediate shipping of the merchandise to the preparation place system 400.

The control section 301 of the transfer place system 300 periodically monitors the acquired position information to judge whether or not the orderer's moving path is normal (step S134).

When the orderer's moving path is judged to be normal (step S134/Yes), that is, a distance between the orderer and the transfer place is reduced with an elapse of time from the position information, the control section 301 continues monitoring the orderer's position information as such.

Next, at time t2, the transferer confirms that the orderer has arrived at the transfer place, and transfers the merchandise to the orderer so that the payment is made. The transferer uses the operation section 304 to input information indicating the completion of the merchandise transfer and payment. When the control section 301 recognizes the input of the information indicating the completion of the merchandise transfer and payment (step S135/Yes), the transmission/reception section 302 transmits the information indicating the normal ending of the merchandise transfer to the acceptance center system 200 (step S136). When the input of the information indicating the completion of the merchandise transfer and payment is not recognized (step S135/No), the process of the step S134 is repeated.

Upon receiving the information indicating the normal ending of the merchandise transfer, the transmission/reception section 202 of the acceptance center system 200 transmits a command for stopping the acquisition  
5 of the position information and traffic information on the orderer who has received the merchandise to the transfer place system 300 and preparation place system 400 (step S127).

Upon receiving the information acquisition stop  
10 command from the acceptance center system 200, the transmission/reception section 302 of the transfer place system 300 and the transmission/reception section 402 of the preparation place system 400 stop a process of acquiring of the corresponding position information and  
15 traffic information (step S128), and the first-order type drive through system ends the operation.

At time t3 ((e) of FIG. 3), when the orderer's moving path is judged to be abnormal (step S134/No), that is, when the distance between the orderer and the transfer  
20 place increases with the elapse of time from the position information (especially in a case where it has been detected that the orderer passed the transfer place, the transmission/reception section 302 transmits information indicating the occurrence of a trouble in the merchandise  
25 transfer to the acceptance center system 200 (step S137, (f) of FIG. 3).

Next, upon receiving the trouble occurrence

information from the transfer place system 300, the transmission/reception section 202 of the acceptance center system 200 inquires the position management server 500 again to acquire the orderer's position information (step  
5 S106).

Moreover, the control section 201 searches the preparation place and transfer place again based on the ordering information, newly acquired position information, and store information of the store position DB 207 to  
10 extract a transfer place candidate (steps S107, S108).

The acceptance center negotiates the transfer place with the orderer again, and presents a new transfer place to the orderer (steps S109 to S111).

When the orderer cancels the merchandise ordering,  
15 the first-order type drive through system ends the operation. When the orderer does not cancel the ordering, the new transfer place is set to the destination, and the preparation of the merchandise and the preparing for the transfer are instructed again (steps S112 to S118, (g) of  
20 FIG. 3). To newly designate the transfer place and set the place as the destination in this manner is referred to as a merchandise handover.

Moreover, the merchandise is transferred at time t4. It is to be noted that when the "direct delivery"  
25 option is selected during the re-negotiation between the orderer system 100 and the acceptance center system 200, the transferer delivers the merchandise transported to the

transfer place from the preparation place to the orderer (steps S119 to 139).

It is to be noted that in the present embodiment, the acceptance center system 200, transfer place system 300, and preparation place system 400 transmit the request for acquiring the position information to the position management server 500. The position management server 500 which has received the request for acquiring the position information returns the corresponding position information. Additionally, the orderer system 100 may store the position information in the information storage section 113 or 123 without transmitting the information to the position management server 500. In this case, the acceptance center system 200, transfer place system 300, and preparation place system 400 may directly transmit the request for acquiring the position information to the orderer system 100 to acquire the information.

Moreover, the orderer system 100 may spontaneously transmit the position information to the acceptance center system 200, transfer place system 300, and preparation place system 400 without transmitting the information to the position management server 500. In this case, it is assumed that the orderer system 100 receives and stores addresses of the transfer place system 300 and preparation place system 400 of the determined preparation place and transfer place from the acceptance center system 200.

Furthermore, the acceptance center system 200

periodically transmits the acquisition request of the position information to the orderer system 100 or the position management server 500 to acquire the position information from when the acceptance center system 200 receives the ordering information from the orderer system 100 until receiving the information indicating the completion of the merchandise transfer from the transfer place system 300. The preparation place and transfer place may be determined, and thereafter periodically transferred to the transfer place system 300 and preparation place system 400. In this case, the transfer place system 300 and preparation place system 400 periodically transmit the position information acquisition request to the acceptance center system 200. Every time the acceptance center system 200 may transmit the position information to the transfer place system 300 and preparation place system 400.

It is to be noted that for a payment process in the present embodiment, when receiving the merchandise from the transferer or the preparer, the orderer may directly pay to the transferer or the preparer, or may pay in advance using a credit card or the like. At this time, the transfer place system 300 or the preparation place system 400 may function as a point of sales system (POS) to input information on the payment, or to transmit the inputted information to the acceptance center system 200.

Moreover, in the present embodiment, the transfer place system 300 and the preparation place system 400

constantly grasp the orderer's present position, but at least one of the transfer place system 300 and the preparation place system 400 may periodically acquire the position information. When only the preparation place system 400 periodically acquires the position information, the preparation place system 400 monitors the orderer's moving path in the same manner as in the transfer place system 300 in the present embodiment, and notifies the acceptance center system 200 of the trouble if found.

Moreover, the acceptance center system 200 may constantly grasp the orderer's present position. In this case, the acceptance center system 200 can monitor the orderer's moving path to find the trouble in the same manner as in the transfer place system 300 in the present embodiment. Upon receiving the information indicating the completion of the transfer of the merchandise from the transfer place system 300 or the preparation place system 400, the acceptance center system 200 stops the acquisition of the position information.

FIG. 6 is a diagram showing a concrete example in which the first-order type drive through system in the first embodiment of the present invention is applied to a fast-food reservation system.

As shown in FIG. 6, the first-order type drive through system includes the orderer system, acceptance center system, store system, position management server, radio communication network, mobile unit network, and

internet. In the example shown in FIG. 6, the store serves both as the preparation place and the transfer place, and the store system has functions of the transfer place system 300 and preparation place system 400.

5           Moreover, as shown in FIG. 6, the acceptance center system is connected to the store system via the internet. The orderer system is connected to the position management server via a radio communication network and mobile unit network, and is connected to the acceptance  
10           center system and store system via the radio communication network, mobile unit network, and internet.

          In FIG. 6, it is assumed that the automobile on which the orderer gets cannot move backwards during run. The orderer system is mounted on the automobile on which  
15           the orderer gets. The orderer system includes a GPS terminal device, communication terminal device, microphone, speaker, and operation panel. The GPS terminal device receives the radio wave from the GPS satellite to measure the present position of the automobile on which the orderer  
20           gets. The communication terminal device transmits/receives the information with the position management server, acceptance center system, and store system via the radio communication network, mobile unit network, and internet. The microphone inputs the sound, and the speaker outputs  
25           the sound. The operation panel is an information input device constituted of predetermined switches/keys. Moreover, a display for displaying the information is



disposed on the operation panel.

The acceptance center system is installed in the acceptance center which receives the orders for the merchandises from the orderers. The acceptance center  
5 system includes an order receiving system, store position DB, router, and internet protocol (IP) telephone.

The order receiving system receives the order for the merchandise from the orderer system, and notifies the store system of a received order content (ordering  
10 information). The store position DB is a database in which the position information of a store (fast-food shop) is stored. The router transmits/receives the information via the internet. The IP telephone is a system in which a telephone call is made via the IP network (internet), and  
15 the telephone call can be carried out with respect to the communication terminal device of the orderer system.

The store system is installed in the fast-food shop in which the merchandise is prepared in accordance with the ordered content from the orderer, and transferred  
20 to the orderer, and the payment is made. Moreover, a kitchen for preparing the ordered merchandise is installed in the fast-food shop. The store system includes a personal computer (PC), display panel, router, and cash register.

25 The PC acquires the ordering information from the acceptance center system, and accepts the merchandise order from the orderer. The PC inquires the position management

server of the orderer's position information to acquire the information. The router transmits/receives the information via the internet. The display panel displays the content of the ordering information received by the router from the acceptance center system. For the cash register, the payment process during the transfer of the merchandise to the orderer is carried out, and the information indicating the completion of the merchandise transfer and payment is inputted.

10           The operation in the application example into the fast-food reservation system by the first-order type drive through system will hereinafter be described with reference to FIG. 6.

15           The orderer inputs the ordered content via the operation panel, communicates with the acceptance center system, and places the order for the merchandise. In this case, the orderer system notifies the acceptance center system of the position information obtained by the GPS terminal device via a position information server.

20           The acceptance center system receives the ordering information and position information from the orderer system, simultaneously searches the stores along an expressway from the orderer's position information during the orderer's run, and transmits search results to the orderer system. When the orderer system receives the search result of the store, the operation panel of the orderer system displays the search result. When the

25

orderer uses the operation panel to select the store to drop by, the orderer system transmits the information indicating the selected store to the acceptance center system. Upon receiving the information indicating the selected store, the acceptance center system completes the order receiving process, and notifies the store system of the selected store of the order for the merchandise.

The store system acquires the orderer's position from the position information server, presumes an anticipated arrival time, and schedules the preparation so that the merchandise is completed at the time of the orderer's arrival.

When the orderer passes the store where the merchandise is to be received, the store system notifies the acceptance center system of the occurrence of the trouble in the merchandise transfer. When the acceptance center system receives the information indicating the occurrence of the trouble in the merchandise transfer, the staff member of the acceptance center uses the IP telephone to make a call with the orderer. When the orderer agrees with the preparation of the same merchandise in another store, the acceptance center system transfers the information indicating the order for the merchandise to the other store. Upon receiving the order for the merchandise from the acceptance center system, the store system in the other store prepares the merchandise to prepare for the merchandise transfer.

As described above, according to the present invention, the transfer place system 300 and preparation place system 400 periodically acquire the orderer's position information from when receiving the ordering information from the acceptance center system 200 until the completion of the merchandise transfer/payment. Therefore, it is possible for the preparer and transferer of the merchandise to constantly grasp whether or not the preparer and the transferer of the merchandise move along the normal moving path for the orderer to receive the merchandise. Moreover, the orderer limits a period to that from the merchandise ordering until the receiving to supply the orderer's position information, and it is therefore to protect the orderer's privacy.

Moreover, according to the present invention, the transfer place system 300 and preparation place system 400 estimates a time at which the orderer arrives at the transfer place based on the periodically acquired orderer's position information/traffic information. Therefore, it is possible for the preparer to prepare the merchandise in time for the estimated arrival time and to transfer the merchandise to the transfer place. Moreover, since the transferer can transfer the merchandise in time for the orderer's arrival, the orderer may not require a wasteful waiting time.

Moreover, according to the present invention, upon receiving information indicating deviation from the normal

moving path for the orderer to receive the merchandise from the transfer place system 300, the acceptance center system 200 transmits information indicating a new transfer place candidate to the orderer system 100, and supplies the transfer place in accordance with the orderer's position again. Therefore, even when the orderer passes the transfer place and it is difficult to return, it is possible to prepare the same merchandise in another preparation place/transfer place and to transfer the merchandise to the orderer.

Moreover, according to the present embodiment, the transfer place system 300 and preparation place system 400 periodically acquire the orderer's position information and traffic information. Therefore, since the preparer and transferer can monitor the orderer's position, mischievous ordering can be prevented. It is also possible to presume a reason why the merchandise is not fetched in consideration of road situations.

Furthermore, according to the present embodiment, character/sound information is used to carry out bidirectional communication between the orderer system 100 and the acceptance center system 200. Therefore, when the orderer deviates from the normal moving path for fetching the merchandise, the acceptance center system 200 can check whether or not the orderer cancels the merchandise ordering.

Second Embodiment:

A second embodiment of the present invention will

hereinafter be described, but the constitution and operation in the present embodiment system mode are similar to those of the first embodiment unless otherwise specified.

5 In the present embodiment, when the transmission/reception section 112 of the orderer system 100 transmits the ordering information, the orderer destination information indicating the destination to which the orderer is moving to the acceptance center system 200.

10 Upon receiving the ordering information and destination information from the orderer system 100, the transmission/reception section 202 of the acceptance center system 200 inquires the position management server 500 of the orderer's position information to acquire the information.

15 The control section 201 detects (estimates) the orderer's future moving path based on the position information and destination information.

20 Next, the control section 201 can refer to the store position DB 207 to prepare the ordered merchandise by the ordering information, and searches for the preparation place within the predetermined distance from the detected orderer's moving path.

25 Next, the control section 201 refers to the store position DB 207 to search for the transfer place within the predetermined distance from the detected moving path. It is assumed that the following operation is similar to that of the first embodiment of the present invention.

In this manner, according to the present embodiment, the orderer system 100 transmits the destination information together with the ordering information to the acceptance center system 200. The  
5 acceptance center system 200 uses the destination information to estimate the orderer's moving path, and extracts and transmits the transfer place candidate close to the moving path to the orderer system 100. Therefore, it is possible for the orderer to receive the merchandise  
10 on the way to the destination without detouring.

Third Embodiment:

A third embodiment of the present invention will hereinafter be described, but the constitution and operation in the present embodiment system mode are similar  
15 to those of the first embodiment unless otherwise specified.

In the present embodiment, the transfer place system 300 (transmission/reception section 302) and the preparation place system 400 (transmission/reception section 402) periodically transmit the operation situations  
20 (operation ratios) in the transfer place and preparation place where the systems are installed to the acceptance center system 200.

The examples of the operation situations mentioned herein include the number of preparation/transport requests  
25 of the merchandises per staff member of the preparation place/transfer place in a predetermined time. The staff member of the preparation place/transfer place may use the

operation section to input the operation situation to the preparation place system 400 or the transfer place system 300. The control section of each system may count the number of orderings and the number of ordered merchandises as the operation situations based on the ordering information received by the transmission/reception section of each system.

Upon receiving the information indicating the operation situations of the transfer place and preparation place from the transfer place system 300 and preparation place system 400, the control section of the acceptance center system 200 preferentially extracts the preparation place and transfer place low in operation ratio, and transmits the information indicating the transfer place candidate low in the operation ratio to the orderer system 100.

In this manner, according to the present embodiment, the acceptance center system 200 presents the transfer place candidate to the orderer in accordance with the operation situations of the preparation place and transfer place. Therefore, it is possible to efficiently use the preparation place and transfer place, and it is also possible for the orderer to reduce the waiting time in receiving the merchandise by operation delays in the preparation place and transfer place.

Fourth Embodiment:

A fourth embodiment of the present invention will



hereinafter be described, but the constitution and operation in the present embodiment are similar to those of the first embodiment unless otherwise specified.

In the first embodiment of the present invention,  
5 a period in which the transfer place system 300 and preparation place system 400 can acquire the orderer's position information is from when the ordering information is received from the acceptance center system 200 until the information acquisition stop command is received. The  
10 period in which the acceptance center system 200 can acquire the position information is from when the ordering information is received from the orderer system 100 until the information indicating the merchandise transfer completion is received from the transfer place system 300  
15 or preparation place system 400. It is assumed in the present embodiment that the orderer can optionally set a period for permitting the acquisition of the position information indicating the orderer's present position (hereinafter referred to as the position acquisition  
20 permission period). The operation in the present embodiment will hereinafter be described.

In the present embodiment, an input column for inputting the position acquisition permission period is disposed via a graphical user interface (GUI) on the  
25 transfer place candidate web page. The orderer operates the operation section 114 to select either one from the transfer place and direct delivery option and to input the

position acquisition permission period in the input column on the transfer place candidate web page. The information storage section 113 of the orderer system 100 stores the inputted position acquisition permission period.

5           In a method of inputting the position acquisition permission period, for example, "desired merchandise transfer time" and "position acquisition permission time" may also be inputted. For example, the orderer inputs "30 minutes" as the "position acquisition permission time" to  
10       permit the acquisition of the position information 30 minutes from the transfer of the merchandise. When the merchandise is desired to be received at 13:00, the position acquisition permission period for the transfer place system 300 and preparation place system 400 is from  
15       12:30 which is 30 minutes before the desired merchandise transfer time until the reception of the information acquisition stop command. The period for the acceptance center system 200 is from 12:30 which is 30 minutes before  
20       of the information indicating the completion of the merchandise transfer from the transfer place system 300 or preparation place system 400.

          Moreover, in a method of inputting the position acquisition permission period, for example, the "position  
25       acquisition permission time" may also be inputted. For example, the orderer inputs the position acquisition permission time as one hour. When the position information

is permitted to be acquired from the ordering time, the position acquisition permission period for the acceptance center system 200 is one hour from when the ordering information is received. The acceptance center system 200  
5 transmits the information acquisition stop command to the transfer place system 300 and preparation place system 400 after an elapse of the position acquisition permission time (e.g., one hour) from an ordering information reception time. In this case, the position acquisition permission  
10 period for the transfer place system 300 or preparation place system 400 is from when the ordering information is received from the acceptance center system 200 until the information acquisition stop command is received.

Moreover, as the position acquisition permission  
15 period, "time to start permission of position information acquisition" and "time to stop the permission of the position information acquisition" may also be inputted. In this case, the position acquisition permission period for the acceptance center system 200, transfer place system 300,  
20 and preparation place system 400 is a time from the "time to start permission of position information acquisition" until "time to stop the permission of the position information acquisition".

In any of the above-described cases, the  
25 acceptance center system 200 may store the position acquisition permission period, and notify the orderer system 100 of the start and end of the position acquisition

permission period via screen or sound.

The position information is stored in the orderer system 100. When the acceptance center system 200, transfer place system 300, and preparation place system 400  
5 transmits the request for acquiring the position information to the orderer system 100, the orderer system 100 judges whether or not the present time is within the position acquisition permission period. When the orderer system 100 judges that the present time is within the  
10 position acquisition permission period, the position information is transmitted in response to the received acquisition request. The orderer system 100 does not transmit the position information, when it is judged that the present time is out of the position acquisition  
15 permission period at the time of the reception of the position information acquisition request.

Moreover, when the position management server 500 stores the position information, the acceptance center system 200 transmits the orderer's identification  
20 information together with the information indicating the position acquisition permission period to the position management server 500. In this case, the position management server 500 can regulate the transmission of the position information in the same manner as in the orderer  
25 system 100.

Furthermore, when the orderer system 100 stores the position information, and the position information is

spontaneously and periodically transmitted to the acceptance center system 200, transfer place system 300, and preparation place system 400, the orderer system 100 judges whether or not the present time is within the position acquisition permission period. When the orderer system 100 judges that the present time is within the position acquisition permission period, the addresses of the transfer place system 300 and preparation place system 400 acquired from the acceptance center system 200 are used to spontaneously transmit the position information. When the orderer system 100 judges that the present time is out of the position acquisition permission period, the position information is not transmitted.

It is to be noted that in any of the above-described cases, the acceptance center system 200 can acquire the position information in order to determine the preparation place and transfer place even outside the position acquisition permission period.

Moreover, the use of the transfer place candidate web page has been described, but in the same manner as in the first embodiment, the orderer may notify the staff member of the acceptance center of the position acquisition permission period via the telephone call.

As described above, according to the present embodiment, the orderer optionally determines the period in which the permission for the acquisition of the position information indicating the orderer's present position is

granted, and the acceptance center system 200, transfer place system 300, and preparation place system 400 are permitted to acquire the position information only in the determined period. Therefore, since the orderer notifies  
5 the order receiving side of the orderer's present position in the limited desired period, it is possible to further protect the orderer's privacy.

Summary of Embodiments:

The orderer system 100 carries out processes to  
10 acquire the position information, transmit the position information, transmit the ordering information, input the information, and display the information.

Moreover, the acceptance center system 200 carries out processes to transmit the ordering information and  
15 position information, determine the preparation place and transfer place where the merchandise is prepared/transferred, prepare the information indicating the transfer place candidate, transmit/receive the information on the merchandise ordering with respect to the orderer system 100,  
20 transmit the command for stopping the position information acquisition to the transfer place system 300 and preparation place system 400, acquire the traffic information, and calculate the estimated time at which the orderer receives the merchandise.

Furthermore, the transfer place system 300 carries  
25 out processes to periodically acquire the orderer's position information, transmit/receive the information,

display the information, monitor the orderer's moving path,  
notify the acceptance center system 200 of the trouble when  
recognized, acquire the traffic information, and calculate  
the estimated time at which the orderer receives the  
5 merchandise.

Additionally, the preparation place system 400  
carries out processes to periodically acquire the orderer's  
position information, transmit/receive the information,  
display the information, acquire the traffic information,  
10 and calculate the estimated time at which the orderer  
receives the merchandise.

Moreover, the position management server 500  
carries out processes to transmit/receive the position  
information and to store the position information.

15 Furthermore, the traffic information management  
server 700 carries out processes to acquire the traffic  
information, store the traffic information, and transmit  
the traffic information.

The above-described processes are executed by a  
20 computer program possessed by the orderer system 100,  
acceptance center system 200, transfer place system 300,  
preparation place system 400, position management server  
500, or traffic information management server 700, but the  
above-described program may be recorded in recording  
25 mediums such as an optical recording medium, magnetic  
recording medium, magnetic optical recording medium, and  
semiconductor, and may be loaded from the above-described

recording medium or from an exterior apparatus connected via a predetermined network.

It is to be noted that the above-described embodiment is a preferable one embodiment of the present invention, but the embodiment of the present invention is not limited to this, and the present invention can variously be modified and embodied without departing from the scope of the present invention.

As described above, according to the present invention, the transfer place system and preparation place system periodically acquires the orderer's position information from when the ordering information is received from the acceptance center system until the completion of the merchandise transfer/payment. Therefore, it is possible for the preparer and transferer of the merchandise to constantly grasp whether or not the orderer moves along the normal moving path for receiving the merchandise. Moreover, since the orderer limits the period to that from the merchandise ordering until the receiving to provide the orderer's position information, it is possible to protect the orderer's privacy.

Moreover, according to the present invention, the transfer place system and preparation place system calculate the estimated time at which the orderer arrives at the transfer place based on the periodically acquired orderer's position information and traffic information. Therefore, the preparer can prepare the merchandise in time



for the estimated arrival time and transport the merchandise to the transfer place. Moreover, since the transferer can transfer the merchandise in time for the orderer's arrival, the orderer does not require any wasteful waiting time.

Moreover, according to the present invention, upon receiving the information indicating that the orderer deviates from the normal moving path for receiving the merchandise from the transfer place system, the acceptance center system transmits the information indicating the new transfer place candidate to the orderer system, and anew presents the transfer place in accordance with the orderer's position. Therefore, even when the orderer passes the transfer place, and it is difficult to return, it is possible to prepare the same merchandise in another preparation place/transfer place and to transfer the merchandise to the orderer.

Furthermore, according to the present invention, the transfer place system and preparation place system periodically acquire the orderer's position information and traffic information. Therefore, since the preparer and transferer can monitor the orderer's position, the mischievous ordering can be prevented. Moreover, it is possible to presume the reason why the merchandise is not received in consideration of the road situations.

Additionally, according to the present invention, the orderer system transmits the ordering information

together with the destination information to the acceptance center system. The acceptance center system uses the destination information to estimate the orderer's moving path, extracts the transfer place candidate close to the moving path, and transmits the candidate to the orderer system. Therefore, it is possible for the orderer to receive the merchandise on the way to the destination without detouring.

Moreover, according to the present invention, the acceptance center system presents the transfer place candidate to the orderer in accordance with the operation situations of the preparation place and transfer place. Therefore, the preparation place and transfer place can efficiently be used. The orderer can also reduce the waiting time in receiving the merchandise by the operation delays in the preparation place and transfer place.

Furthermore, according to the present invention, the orderer arbitrarily determines the period to grant the permission for acquiring the position information indicating the orderer's present position, and the acceptance center system, transfer place system, and preparation place system are permitted to acquire the position information only in the determined period. Therefore, since the orderer limits the desired period and the orderer's present position is notified on the order receiving side, it is possible to further protect the orderer's privacy.